Amendments to the Specification

On page 1 of the specification, in the section titled "Background of the Invention", after the sentence beginning with, "The invention relates to a three dimensional (3D) display of the integral photography type." (lines 6 and 7): Please delete the remaining paragraphs of this section (i.e., please delete lines 8-34 on page 1, and lines 1-33 on page 2).

On page 4 of the specification after the heading "Description of Preferred Embodiments" on line 17 and before the sentence "The image reproducing device according to the invention..." on line 16, please insert the following **new** paragraphs that are new to this section:

For the display of static or dynamic 3D images only the holographic method and the integral photography method are such that, on one hand, the viewer does not need to wear glasses and, on the other hand, the position of the eyes with respect to the display is not critical in order to obtain a correct 3D image.

Compared to the holographic method, the integral photography has the advantage of a greater simplicity.

This known integral photography method will be explained herein after with reference to figure 1 and figure 2.

Figure 1 shows the principle of image capturing. The image capturing equipment comprises an array 10 of holes (or apertures) or lenses a, b, c ... At a given distance d of this array 10 is provided a set 12 of detectors A, B, C ... such as CCDs.

Each of those detectors has a predetermined number of detecting elements; this predetermined number is 8 in this simplified example. To each detecting element corresponds a pixel of a flat surface display (for example a liquid crystal display LCD) 14 of the image-reproducing device represented on figure 2. When a CCD detecting element receives light, the corresponding display pixel becomes transparent with a transmission coefficient which depends on the light intensity received by the CCD element.

In the example shown on figure 1 an object point P illuminates the detector elements A5, B3, C2 and the object point Q illuminates the detector elements A7, B6 and C5.

The correspondence between CCD elements and display pixels is such that to each CCD detector A, B, C ... corresponds a reproducing section A', B', C' and the order of the pixels in each reproducing section (A' for example) is inverted with respect to the order of the CCD elements in the corresponding (A) CCD detector. For example on figure 1 the CCD element A1 is on the right part of CCD detector A and, on figure 2, the corresponding pixel element A'1 is on the left part of this section.

The control of display 14 from signals provided by CCD 12, including the inversion, is realized by a processor not shown on figures 1 and 2.

The reproducing apparatus comprises an array 16 of holes or apertures, or lenses (passive array) corresponding to the array 10 of the image-capturing device. This array 16 is associated to the flat surface display 14 and to a light source 18 in such a way that light emitted by source 18 crosses the display 14 and, afterwards, the holes of array 16. If the array 16 is identical to the array 10 of the capturing device and if the inverted relative positions of pixel elements A'1, A'2, ..., B'1, B'2, ... are the same as the relative positions of CCD element, A1, A2, ... B1, B2, ... the distance d between array 16 and display 14 is equal to the distance between array 10 and CCD 12.

The light rays A'5a, B'3b, and C'2c converge virtually to point P_1. The light rays A'7a, B'6b and C'5c converge virtually to point Q1. The respective positions of points P_1 and Q_1 are exactly the same as the respective positions of original points P and Q. In other words the integral photography 3D display provides a true 3D image of the original object if there is perfect correspondence between detecting elements and corresponding pixels of flat display, for example LCD 14. The arrays 10 and 16 may be replaced by arrays of small lenses or equivalent means.